

## Preliminary Classification:

Proposed Class:

Subclass:

NOTE: "All applicants are requested to include a preliminary classification on newly filed patent applications. The preliminary classification, preferably class and subclass designations, should be identified in the upper right-hand corner of the letter of transmittal accompanying the application papers, for example 'Proposed Class 2, subclass 129.'" M.P.E.P. § 601, 7th ed.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box Patent Application  
Assistant Commissioner for Patents  
Washington, D.C. 20231

## NEW APPLICATION TRANSMITTAL

Transmitted herewith for filing is the patent application of

Inventor(s): Timo SIVULA

WARNING: 37 C.F.R. § 1.41(a)(1) points out:

"(a) A patent is applied for in the name or names of the actual inventor or inventors.

"(1) The inventorship of a nonprovisional application is that inventorship set forth in the oath or declaration as prescribed by § 1.63, except as provided for in § 1.53(d)(4) and § 1.63(d). If an oath or declaration as prescribed by § 1.63 is not filed during the pendency of a nonprovisional application, the inventorship is that inventorship set forth in the application papers filed pursuant to § 1.53(b), unless a petition under this paragraph accompanied by the fee set forth in § 1.17(f) is filed supplying or changing the name or names of the inventor or inventors."

For (title): CHARGING FOR TELECOMMUNICATIONS SERVICES

## CERTIFICATION UNDER 37 C.F.R. § 1.10\*

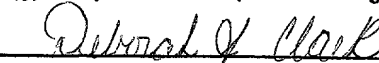
(Express Mail label number is mandatory.)

(Express Mail certification is optional.)

I hereby certify that this New Application Transmittal and the documents referred to as attached therein are being deposited with the United States Postal Service on this date November 20, 2000, in an envelope as "Express Mail Post Office to Addressee," mailing Label Number EL627420816US, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Deborah J. Clark

(type or print name of person mailing paper)



Signature of person mailing paper

WARNING: Certificate of mailing (first class) or facsimile transmission procedures of 37 C.F.R. § 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.

\*WARNING: Each paper or fee filed by "Express Mail" must have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. § 1.10(b).

"Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition." Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

(New Application Transmittal [4-1]—page 1 of 11)

## 1. Type of Application

This new application is for a(n)

(check one applicable item below)

- ☒ Original (nonprovisional)  
☐ Design  
☐ Plant

**WARNING:** Do not use this transmittal for a completion in the U.S. of an International Application under 35 U.S.C. § 371(c)(4), unless the International Application is being filed as a divisional, continuation or continuation-in-part application.

**WARNING:** Do not use this transmittal for the filing of a provisional application.

**NOTE:** If one of the following 3 items apply, then complete and attach **ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF A PRIOR U.S. APPLICATION CLAIMED** and a **NOTIFICATION IN PARENT APPLICATION OF THE FILING OF THIS CONTINUATION APPLICATION**.

- ☐ Divisional.  
☐ Continuation.  
☐ Continuation-in-part (C-I-P).

## 2. Benefit of Prior U.S. Application(s) (35 U.S.C. §§ 119(e), 120, or 121)

**NOTE:** A nonprovisional application may claim an invention disclosed in one or more prior filed copending nonprovisional applications or copending international applications designating the United States of America. In order for a nonprovisional application to claim the benefit of a prior filed copending nonprovisional application or copending international application designating the United States of America, each prior application must name as an inventor at least one inventor named in the later filed nonprovisional application and disclose the named inventor's invention claimed in at least one claim of the later filed nonprovisional application in the manner provided by the first paragraph of 35 U.S.C. § 112. Each prior application must also be:

(i) An international application entitled to a filing date in accordance with PCT Article 11 and designating the United States of America; or

(ii) Complete as set forth in § 1.51(b); or

(iii) Entitled to a filing date as set forth in § 1.53(b) or § 1.53(d) and include the basic filing fee set forth in § 1.16; or

(iv) Entitled to a filing date as set forth in § 1.53(b) and have paid therein the processing and retention fee set forth in § 1.21(f) within the time period set forth in § 1.53(f).

37 C.F.R. § 1.78(a)(1).

**NOTE:** If the new application being transmitted is a divisional, continuation or a continuation-in-part of a parent case, or where the parent case is an International Application which designated the U.S., or benefit of a prior provisional application is claimed, then check the following item and complete and attach **ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED**.

**WARNING:** If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. §§ 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. §§ 120, 121 or 365(c). (35 U.S.C. § 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. §§ 119, 365(a) or 365(b).) For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

(New Application Transmittal [4-1]—page 2 of 11)

09745680 4200

# SECRET

- ### 3. Papers Enclosed

5 Sheets of drawing

(complete the following, if applicable)

- ☐
- informal**

           Other

## ☐ Citations

- ☐ Declaration of Biological Deposit
- ☐ Submission of "Sequence Listing," computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.
- ☐ Authorization of Attorney(s) to Accept and Follow Instructions from Representative
- ☐ Special Comments
- ☐ Other

**5. Declaration or oath (including power of attorney)**

**NOTE:** A newly executed declaration is not required in a continuation or divisional application provided that the prior nonprovisional application contained a declaration as required, the application being filed is by all or fewer than all the inventors named in the prior application, there is no new matter in the application being filed, and a copy of the executed declaration filed in the prior application (showing the signature or an indication thereon that it was signed) is submitted. The copy must be accompanied by a statement requesting deletion of the names of person(s) who are not inventors of the application being filed. If the declaration in the prior application was filed under § 1.47, then a copy of that declaration must be filed accompanied by a copy of the decision granting § 1.47 status or, if a nonsigning person under § 1.47 has subsequently joined in a prior application, then a copy of the subsequently executed declaration must be filed. See 37 C.F.R. §§ 1.63(d)(1)-(3).

**NOTE:** A declaration filed to complete an application must be executed, identify the specification to which it is directed, identify each inventor by full name including family name and at least one given name, without abbreviation together with any other given name or initial, and the residence, post office address and country or citizenship of each inventor, and state whether the inventor is a sole or joint inventor. 37 C.F.R. § 1.63(a)(1)-(4).

☒ Enclosed

Executed by

(check all applicable boxes)

- ☒ Inventor(s).
- ☐ legal representative of inventor(s).  
37 C.F.R. §§ 1.42 or 1.43.
- ☐ joint inventor or person showing a proprietary interest on behalf of inventor who refused to sign or cannot be reached.
  - ☐ This is the petition required by 37 C.F.R. § 1.47 and the statement required by 37 C.F.R. § 1.47 is also attached. See item 13 below for fee.

☐ Not Enclosed.

**NOTE:** Where the filing is a completion in the U.S. of an International Application or where the completion of the U.S. application contains subject matter in addition to the International Application, the application may be treated as a continuation or continuation-in-part, as the case may be, utilizing ADDED PAGE FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION CLAIMED.

- ☐ Application is made by a person authorized under 37 C.F.R. § 1.41(c) on behalf of all the above named inventor(s).

(The declaration or oath, along with the surcharge required by 37 C.F.R. § 1.16(e) can be filed subsequently).

- ☐ Showing that the filing is authorized.  
(not required unless called into question. 37 C.F.R. § 1.41(d))

## 6. Inventorship Statement

**WARNING:** If the named inventors are each not the inventors of all the claims an explanation, including the ownership of the various claims at the time the last claimed invention was made, should be submitted.

The inventorship for all the claims in this application are:

☐ The same.

or

☐ Not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made,

☐ is submitted.

☐ will be submitted.

## 7. Language

**NOTE:** An application including a signed oath or declaration may be filed in a language other than English. An English translation of the non-English language application and the processing fee of \$130.00 required by 37 C.F.R. § 1.17(k) is required to be filed with the application, or within such time as may be set by the Office. 37 C.F.R. § 1.52(d).

☒ English

☐ Non-English

☐ The attached translation includes a statement that the translation is accurate. 37 C.F.R. § 1.52(d).

## 8. Assignment

☒ An assignment of the invention to Nokia Mobile Phones Ltd.

☒ is attached. A separate ☒ "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or ☐ FORM PTO 1595 is also attached.

☐ will follow.

**NOTE:** "If an assignment is submitted with a new application, send two separate letters—one for the application and one for the assignment." Notice of May 4, 1990 (1114 O.G. 77-78).

**WARNING:** A newly executed "CERTIFICATE UNDER 37 C.F.R. § 3.73(b)" must be filed when a continuation-in-part application is filed by an assignee. Notice of April 30, 1993, 1150 O.G. 62-64.

(New Application Transmittal [4-1]—page 5 of 11)

093716680 112000

9. Certified Copy

Certified copy(ies) of application(s)

Country	Appl. No.	Filed
Finland	19992485	22 November 1999
Country	Appl. No.	Filed
Country	Appl. No.	Filed

from which priority is claimed

☒ Is (are) attached.

☐ will follow.

NOTE: The foreign application forming the basis for the claim for priority must be referred to in the oath or declaration. 37 C.F.R. § 1.55(a) and 1.63.

NOTE: This item is for any foreign priority for which the application being filed directly relates. If any parent U.S. application or International Application from which this application claims benefit under 35 U.S.C. § 120 is itself entitled to priority from a prior foreign application, then complete Item 18 on the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

10. Fee Calculation (37 C.F.R. § 1.16)

A. ☒ Regular application

CLAIMS AS FILED			
Number filed	Number Extra	Rate	Basic Fee 37 C.F.R. § 1.16(a) \$ 710.00
Total Claims (37 C.F.R. § 1.16(c))	15 - 20 = 0	× \$ 18.00	0
Independent Claims (37 C.F.R. § 1.16(b))	3 - 3 = 0	× \$ 80.00	0
Multiple dependent claim(s), If any (37 C.F.R. § 1.16(d))		+ \$ 270.00	

☐ Amendment cancelling extra claims is enclosed.

☒ Amendment deleting multiple-dependencies is enclosed.

☐ Fee for extra claims is not being paid at this time.

NOTE: If the fees for extra claims are not paid on filing they must be paid or the claims cancelled by amendment, prior to the expiration of the time period set for response by the Patent and Trademark Office in any notice of fee deficiency. 37 C.F.R. § 1.16(d).

Filing Fee Calculation

\$ 710.00

B. ☐ Design application

(\$ 320.00 - 37 C.F.R. § 1.16(f))

Filing Fee Calculation

\$

C. ☐ Plant application

(\$ 490.00 - 37 C.F.R. § 1.16(g))

Filing fee calculation

\$

11. Small Entity Statement(s)

- ☐ Statement(s) that this is a filing by a small entity under 37 C.F.R. § 1.9 and 1.27 is (are) attached.

**WARNING:** "Status as a small entity must be specifically established in each application or patent in which the status is available and desired. Status as a small entity in one application or patent does not affect any other application or patent, including applications or patents which are directly or indirectly dependent upon the application or patent in which the status has been established. The refiling of an application under § 1.53 as a continuation, division, or continuation-in-part (including a continued prosecution application under § 1.53(d)), or the filing of a reissue application requires a new determination as to continued entitlement to small entity status for the continuing or reissue application. A nonprovisional application claiming benefit under 35 U.S.C. § 119(e), 120, 121, or 365(c) of a prior application, or a reissue application may rely on a statement filed in the prior application or in the patent if the nonprovisional application or the reissue application includes a reference to the statement in the prior application or in the patent or includes a copy of the statement in the prior application or in the patent and status as a small entity is still proper and desired. The payment of the small entity basic statutory filing fee will be treated as such a reference for purposes of this section." 37 C.F.R. § 1.28(a)(2).

**WARNING:** "Small entity status must not be established when the person or persons signing the . . . statement can unequivocally make the required self-certification." M.P.E.P., § 509.03, 6th ed., rev. 2, July 1996 (emphasis added).

(complete the following, if applicable)

- ☐ Status as a small entity was claimed in prior application  
\_\_\_\_\_/\_\_\_\_\_, filed on \_\_\_\_\_, from which benefit  
is being claimed for this application under:

35 U.S.C. § ☐ 119(e),  
☐ 120,  
☐ 121,  
☐ 365(c),

and which status as a small entity is still proper and desired.

- ☐ A copy of the statement in the prior application is included.

Filing Fee Calculation (50% of A, B or C above)

\$ \_\_\_\_\_

**NOTE:** Any excess of the full fee paid will be refunded if small entity status is established and a refund request are filed within 2 months of the date of timely payment of a full fee. The two-month period is not extendable under § 1.136. 37 C.F.R. § 1.28(a).

12. Request for International-Type Search (37 C.F.R. § 1.104(d))

(complete, if applicable)

- ☐ Please prepare an international-type search report for this application at the time when national examination on the merits takes place.

13. Fee Payment Being Made at This Time

☐ Not Enclosed

☐ No filing fee is to be paid at this time.

(This and the surcharge required by 37 C.F.R. § 1.16(e) can be paid subsequently.)

☒ Enclosed

☒ Filing fee

\$ 710.00

☒ Recording assignment

(\$40.00; 37 C.F.R. § 1.21(h))

(See attached "COVER SHEET FOR  
ASSIGNMENT ACCOMPANYING NEW  
APPLICATION".)

\$ 40.00

☐ Petition fee for filing by other than all the  
inventors or person on behalf of the inventor  
where inventor refused to sign or cannot be  
reached

(\$130.00; 37 C.F.R. §§ 1.47 and 1.17(l))

\$

☐ For processing an application with a  
specification in

a non-English language

(\$130.00; 37 C.F.R. §§ 1.52(d) and 1.17(k))

\$

☐ Processing and retention fee

(\$130.00; 37 C.F.R. §§ 1.53(d) and 1.21(l))

\$

☐ Fee for international-type search report

(\$40.00; 37 C.F.R. § 1.21(e))

\$

NOTE: 37 C.F.R. § 1.21(l) establishes a fee for processing and retaining any application that is abandoned for failing to complete the application pursuant to 37 C.F.R. § 1.53(f) and this, as well as the changes to 37 C.F.R. §§ 1.53 and 1.78(a)(1), indicate that in order to obtain the benefit of a prior U.S. application, either the basic filing fee must be paid, or the processing and retention fee of § 1.21(l) must be paid, within 1 year from notification under § 53(f).

Total fees enclosed

\$ 750.00

14. Method of Payment of Fees

☒ Check in the amount of \$ 750.00

☐ Charge Account No. \_\_\_\_\_ in the amount of  
\$ \_\_\_\_\_

A duplicate of this transmittal is attached.

NOTE: Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 C.F.R. § 1.22(b).



## 15. Authorization to Charge Additional Fees

**WARNING:** If no fees are to be paid on filing, the following items should not be completed.

**WARNING:** Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges, if extra claim charges are authorized.

- ☒ The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Account No. 16-1350.

☒ 37 C.F.R. § 1.16(a), (f) or (g) (filing fees)

☒ 37 C.F.R. § 1.16(b), (c) and (d) (presentation of extra claims)

**NOTE:** Because additional fees for excess or multiple dependent claims not paid on filing or on later presentation must only be paid or these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency (37 C.F.R. § 1.16(d)), it might be best not to authorize the PTO to charge additional claim fees, except possibly when dealing with amendments after final action.

☒ 37 C.F.R. § 1.16(e) (surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application)

☒ 37 C.F.R. § 1.17(a)(1)-(5) (extension fees pursuant to § 1.136(a)).

☒ 37 C.F.R. § 1.17 (application processing fees)

**NOTE:** ". . . A written request may be submitted in an application that is an authorization to treat any concurrent or future reply, requiring a petition for an extension of time under this paragraph for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. An authorization to charge all required fees, fees under § 1.17, or all required extension of time fees will be treated as a constructive petition for an extension of time in any concurrent or future reply requiring a petition for an extension of time under this paragraph for its timely submission. Submission of the fee set forth in § 1.17(a) will also be treated as a constructive petition for an extension of time in any concurrent reply requiring a petition for an extension of time under this paragraph for its timely submission." 37 C.F.R. § 1.136(a)(3).

☐ 37 C.F.R. § 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. § 1.311(b))

**NOTE:** Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 C.F.R. § 1.311(b).

**NOTE:** 37 C.F.R. § 1.28(b) requires "Notification of any change in status resulting in loss of entitlement to small entity status must be filed in the application . . . prior to paying, or at the time of paying, . . . the issue fee. . . ." From the wording of 37 C.F.R. § 1.28(b), (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.

**16. Instructions as to Overpayment**

NOTE: ". . . Amounts of twenty-five dollars or less will not be returned unless specifically requested within a reasonable time, nor will the payer be notified of such amounts; amounts over twenty-five dollars may be returned by check or, if requested, by credit to a deposit account." 37 C.F.R. § 1.26(a).

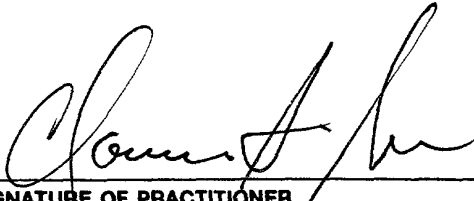
- ☒ Credit Account No. 16-1350  
☐ Refund

SEND ALL CORRESPONDENCE TO:  
Clarence A. Green, Reg. No.: 24,622  
PERMAN & GREEN, LLP  
425 Post Road  
Fairfield, Connecticut 06430

Reg. No. 24,622

Tel. No. ( 203) 259-1800

Customer No. 2512

  
\_\_\_\_\_  
SIGNATURE OF PRACTITIONER

\_\_\_\_\_  
Clarence A. Green  
(type or print name of attorney)

\_\_\_\_\_  
PERMAN & GREEN, LLP  
P.O. Address

\_\_\_\_\_  
425 Post Road, Fairfield, Connecticut 06430  
\_\_\_\_\_

09715680 412000

☐ **Incorporation by reference of added pages**

*(check the following item if the application in this transmittal claims the benefit of prior U.S. application(s) (including an international application entering the U.S. stage as a continuation, divisional or C-I-P application) and complete and attach the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED)*

- ☐ Plus Added Pages for New Application Transmittal Where Benefit of Prior U.S. Application(s) Claimed

Number of pages added \_\_\_\_\_

- ☐ Plus Added Pages for Papers Referred to in Item 4 Above

Number of pages added \_\_\_\_\_

- ☐ Plus added pages deleting names of inventor(s) named in prior application(s) who is/are no longer inventor(s) of the subject matter claimed in this application.

Number of pages added \_\_\_\_\_

- ☐ Plus "Assignment Cover Letter Accompanying New Application"

Number of pages added \_\_\_\_\_

☒ **Statement Where No Further Pages Added**

*(if no further pages form a part of this Transmittal, then end this Transmittal with this page and check the following item)*

- ☒ This transmittal ends with this page.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Express Mail No.: EL627420816US

In re Application of: Timo SIVULA

FILING DATE: Herewith

ART UNIT:

TITLE: CHARGING FOR TELECOMMUNICATIONS SERVICES

ATTORNEY DOCKET NO.: 442-009940-US(PAR)

The Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

Dear Sir:

Please amend the above-identified, enclosed patent application as follows:

**IN THE CLAIMS:**

Please amend Claims 7 and 11 as shown below.

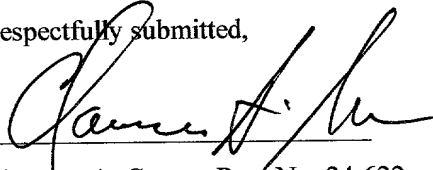
Claim 7, line 1, delete "claims 4 and 5" and insert --claim 4--.

Claim 11, line 1, delete "claims 9 and 10" and insert --claim 9--.

**Remarks**

Please enter this preliminary amendment prior to calculation of the fees.

Respectfully submitted,



Clarence A. Green, Reg. No. 24,622  
Perman & Green, LLP  
425 Post Road  
Fairfield, CT 06430  
(203) 259-1800



Date

## CHARGING FOR TELECOMMUNICATIONS SERVICES

### FIELD OF THE INVENTION

- 5 This invention relates to charging for telecommunication services.

### BACKGROUND OF THE INVENTION

10 The most recently developed mobile telephones have a number of different functions that can be updated by information downloaded from a telecommunications network operator. They are downloaded from the network or provided by an operator or some other service provider. For example, ringing tones can be downloaded to a mobile phone from the mobile network. For example, Finnish telecommunications operator Sonera has a service in which a  
15 request for a new ringing tone is sent from a mobile phone by a Short Message (SM) supported by the Short Message Service (SMS). SMS is known from the Global System for Mobile communications (GSM) system. In response to a short message received from a user, the requested ringing tone is provided to the mobile phone by a SM. A charge is made for this service in a subsequent invoice  
20 for use of the mobile phone.

Whilst a telecommunications network provides a convenient way for a service provider to provide a service to a user and charge the user for the service, a problem arises when the service provider is not the telecommunications network  
25 operator itself. In that case the service provider must have a debiting agreement with the telecommunications network operator for the charge to be included in a telephone invoice of the user. Therefore the service provider needs to have a contract with each telecommunications network operator which relays any of its services. For a service provider providing services globally the present number of  
30 telecommunications network operators is far too large for this to be reasonable. Clearly, since there is a time period between provision of the service and payment to the service provider, in effect the service provider is giving a short-term loan to

the user of the service. This involves a credit risk. It would be convenient if the payment could be received before the service is provided so that the service provider receives payment beforehand.

- 5 As an example of prepaying for a service, Sonera has a prepaid subscription arrangement called "Easy" for establishing and maintaining a mobile telephone subscription with prepaying of phone calls and sending of short messages. Using the service allows ordinary mobile telephone operations such as making mobile telephone calls and sending and receiving short messages. In this arrangement, a
- 10 user initially buys a Subscriber Identification Module (SIM) card with a predetermined monetary value that can be used for making telephone calls and for sending SMSs. The initial price of the SIM card is about 65 USD. Next, the user needs to call to an automatic answering device of Sonera and to provide a serial number to establish an account for the SIM-card. The account will be immediately
- 15 credited with a sum of 52 USD. The account will be debited when telephone calls are made and short messages are sent. Furthermore, when the remaining value on the account approaches zero, the user can credit the account by buying a ticket carrying a serial code from a shop, calling to a dedicated telephone number, and entering the serial code. Each ticket is worth 17 USD. When the serial code is
- 20 verified and accepted value related to the ticket, that is 17 USD, is credited to the user's account. In effect, the subscription arrangement is an extension to a mobile operator's own invoicing system. Instead of maintaining an ordinary user account to be debited afterwards, an account is established beforehand and then debited on use. Debiting the account requires reliable identification of the user so that no
- 25 one else can access the user's account. This happens automatically in GSM phone calls and sending of short messages with the subscriber identification procedure using the SIM-card. However, reliable user identification is a pre-requisite for this subscription arrangement.
- 30 An alternative way to pay for telecommunications services provided by a service provider would be for payment to be made by credit card. In this case the credit risk would then lie with the credit card provider. However, this arrangement is

limited to users who have an approved type of a credit card. Furthermore, credit cards are not a convenient way to deal with small payments, such as five US dollars or less. Additionally, some people do not want to provide their credit card information over a telecommunications network for security reasons.

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Another payment method is to use so-called electronic money or e-money in form of data loaded onto a smart card. If a telephone terminal has a smart card reader and an application for sending e-money from the smart card to a service provider over a telecommunication link, then it is possible to pay for telecommunications services with a smart card. However, such an arrangement requires that smart cards and smart card readers be provided.

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It is an object of the present invention to avoid or at least mitigate the problems described above.

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## SUMMARY OF THE INVENTION

According to a first aspect of the invention there is provided a method for prepayment of a service, comprising the steps of:

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- informing the user of the availability of a plurality of different services;
- receiving from the user over a first communications link an indication of a desired service and a request for the desired service; and
- providing the requested service to the user over a second communications link;

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characterised by said method further comprising the following steps:

- receiving from the user an authentication key to indicate prepayment for the requested service;
- verifying whether the authentication key is valid, and
- providing the requested service if the authentication key is valid.

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A method according to the invention allows a service provider to make a plurality of different services available to users against prepayment. The user can freely

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maintaining an authentication key validity database for verifying the validity of any of the generated authentication keys; and  
delivering the authentication key to a user.



Preferably, the generating of the authentication keys conforms to certain algorithm(s), so that the validity of the authentication key can be determined in itself. The algorithm(s) used is/are preferably such that it is hard or impossible to determine which authentication keys are valid. In this way, there is no need to maintain a database of unused authentication keys, because the validity of an authentication key can be determined by applying the algorithm(s) to verify the authentication key submitted by the user. In this case, a database of all the used authentication keys is maintained.

10

Preferably, the method comprises the step of arranging each of the authentication keys to indicate a time period during which it is valid; and the step of verifying of validity of the authentication key comprises the step of comparing the present date with the a time period during which the authentication key is valid and the step of rejecting of the authentication key if its time period of validity has expired. Preferably, the method further comprises the step of scanning the database of used authentication keys for detecting lapsed authentication keys for removing them from the database of used authentication keys. In this way, the database of used authentication keys does not grow infinitely and the database is easier to maintain.

20

Preferably, the method comprises the step of modifying the validity database on providing the requested service so that the monetary value corresponding to the authentication key indicating the payment is reduced according to a price of the service requested by the user. By modifying the validity database on providing the requested service the service can be charged only when it is successfully provided to the user.

25

Alternatively, the modifying can be performed regardless whether the providing of service has been completed or not. Then it does not matter if the modifying precedes the actual providing of service.

30

The authentication key may be provided in the form of a printed code on a card. This card may readily be sold to the user. This provides a ready method of selling the authentication key to the user, for example in a shop. In this way, the service provider only needs to have a service providing server connected to a public telephone network to allow users to access the server for retrieval of services and does not require any revenue collecting functionality associated with the server. In this way, the service provider may automatically receive revenue from sale of cards rather than having to collect it by some other means. Typically, the service provider may receive income based upon a share of the sales price of the cards.

Thus the service provider can use the prepayments to pay for the telecommunications fees which will be incurred by the delivery of the services. Therefore, instead of lending money to users the service provider can receive money from the user before providing the service. Therefore, the service provider will not have to bear a credit risk.

Preferably the method comprises the step of concealing the authentication key with a non-reversibly removable concealing means. This allows the user to detect easily whether an authentication key has already been disclosed for use and is thus become valueless, and also makes it possible for the user to transfer the card onward to another user, perhaps for further payment. Of course any "new" purchaser of the service can also verify that the authentication key has not been disclosed for use. Once the authentication key is disclosed, the user can supply it to the service provider.

Preferably the method comprises the step of providing the card with more than one authentication key so that the nominal value can be set to a convenient sum such as a single currency unit, for example, a dollar. However, at least some of the authentication keys may have an arbitrary value, for example 0,19 USD.

The step of the providing the service may comprise the further steps of:

- allowing the user to test a service requested; and
- receiving a final verification from the user to ensure that the service

corresponds to the needs of the user.

These steps may occur before the user is provided with the service and before the authentication key validity database is modified.

- 5 Providing a test version is preferably made in a way that prevents the user from fully utilising the object of the service. If the service is delivery of ringing tones, the provision of a testing may involve making a telephone call to the user and playing the ringing tone to the user. The user can listen to the ringing tone and determine whether it meets the expectations of the user. Preferably, in order to request the
- 10 test version, the user may first provide an authentication key. The intended testing use may be determined by entering an authentication key worth less than what is required for the actual service. The authentication key used for testing may have a value just enough to cover the costs of making this call.

- Preferably, at least some of the services relate to content providing. In this case,
- 15 the step of informing the user of the availability of a plurality of different services informs the user of the availability of a plurality of different contents, and correspondingly, the step of providing the requested service provides the requested content. Content is information that is made available so that the user may get it and use it for some purpose, such as enhancing the operation of a
- 20 mobile terminal or providing entertainment or news.

According to a second aspect of the invention there is provided a system for prepayment of a service, comprising:

- 25 means for informing the user of the availability of a plurality of different services;
- means for receiving from the user over a first communications link an indication of a desired service and a request for the desired service; and
- means for providing the requested service to the user over a second communications link;
- 30 characterised by said system further comprising:
- means for receiving from the user an authentication key to indicate prepayment for the requested service;

means for verifying whether the authentication key is valid, and  
means for providing the requested service if the authentication key is valid.

According to a third aspect of the invention there is provided a computer program  
5 product for prepayment of a service, comprising:

computer readable program means for causing a computer to inform the  
user of the availability of a plurality of different services;

computer readable program means for causing a computer to receive over  
a first communications link an indication of a desired service and a request for the  
10 desired service; and

computer readable program means for causing a computer to provide the  
requested service to the user over a second communications link;  
characterised by said computer program product further comprising:

computer readable program means for causing a computer to receive an  
15 authentication key to indicate prepayment for the requested service;

computer readable program means for causing a computer to verify  
whether the authentication key is valid, and

computer readable program means for causing a computer to provide the  
requested service if the authentication key is valid.

20

Advantageously, the computer program product may convert a server connected  
to a telecommunications network such as Internet into a prepayment service  
capable of handling the actions relating to the prepayment of a service or to a  
plurality of services.

25

The present invention can be used in a mobile telephone or data terminal as well  
as in a wired telephone or data terminal, generally a device that can be connected  
to a communications network to use a telecommunications service.

30

## BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

- 5 Figure 1 shows a flow chart of a method for prepayment of a telecommunications service;
- Figure 2 shows additional steps for the method in Figure 1;
- Figure 3 shows a mobile telephone using the method of Figure 1 or the method of Figures 1 and 2;
- 10 Figure 4 shows a prepaid authentication key card for payment of telecommunications services; and
- Figure 5 shows a block diagram of a prepayment system.

## DETAILED DESCRIPTION

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Figure 1 shows a flow chart of a method for prepayment of a telecommunications service. The method shown in Figure 1 starts from step 11, which can be a normal or idle state of a system in which the system is performing processes. These processes may be unrelated to the operation of the invention. Following step 11 is

20 step 12, in which an authentication key validity database is maintained comprising authentication keys and their respective values. The authentication keys are certificates that prove prepayment of a service as will be explained further in more detail. A computer connected to the authentication key validity database generates the authentication keys. Maintaining the authentication key validity database

25 involves receiving and/or generating of new authentication keys and recording them so that they correspond to their respective monetary values. It further involves invalidating authentication keys when they are used so that each particular authentication key may only be used once. This invalidation can be arranged to take place either after or before a service is provided to the user.

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Once a suitable authentication key validity database has been configured, an authentication key is delivered to a service user. This is shown in step 13. The

authentication keys are printed on cards shown in Figure 4. The authentication keys are sequences of numbers so that they are easy to type.

Once the user has an authentication key, the authentication key can be used to  
5 obtain a service that costs a financial amount at most equal to the value of the authentication key. Suppose the user wants to request a new ringing tone to his or her mobile telephone from a service provider. A list of services may be presented on a WWW-page (World Wide Web) of a server of the service provider. A user may access the server with a personal computer that can be connected to the  
10 Internet. Each item of the list (for example each name of ringing tone) may be associated with a hyperlink so that by selecting the name of the ringing tone the user can request the ringing tone from the server. A request message is then sent to the server in a service request message that also comprises an identifier of the ringing tone. In response to such a service request message, a server requests for  
15 an authentication key from the user, as shown in step 14. The user reads the authentication key and enters it to the server to pay for the service. The validity of the authentication key is verified in step 15. In response to a successful entry of a valid authentication key, the telephone number of the user is prompted from the user. The requested service is then provided to the user in step 16 by sending the  
20 requested ringing tone as a short message to the user's mobile telephone number. If the authentication key is invalid, the authentication key is requested again in step 14. When the requested service, a ringing tone in this case, is provided to the user, the authentication key given by the user is invalidated in step 17 so that it cannot be used again.

25

The invalidation involves changing the authentication key validation database so that it shows that the authentication key already has been used when it is received from the user. The unused authentication keys are held in a database so that the presence of an authentication key in the database proves that the authentication  
30 key is unused and valid. In another embodiment, the used authentication keys are kept in the authentication key validity database so that the presence of the authentication key in the database shows that the authentication key is used and

invalid. A further check may be performed for checking if an authentication key has lapsed from being valid as being too old, for example more than 12 months old.

In an alternative embodiment, a mobile telephone is used to obtain a list of services the service provider offers. In this case, the user sends a short message to the server and receives a response short message conveying a list of the services. The list may then be shown to a user on a display of the mobile telephone. The user may request the ringing tone from the service provider for example by sending a request message using the Short Message Service known from GSM. Of course, other request methods can be used, such as sending a facsimile or an e-mail message. In these cases, it is advantageous to include the authentication key in the message so that the authentication key is not requested from the user. In this case, the user should include his or her mobile telephone number in the message so that the server would know where to send the ringing tone, if the authentication key is valid. If the message is a short message, then the telephone number may be automatically included as an identifier of the sender of the short message.

In the most simple and straightforward case each authentication key grants the user to have one service provided once. In an alternative embodiment, the same authentication key may be used to pay more than one transaction. In this case, the value associated with the authentication key in the database is reduced by a fee of the service. An account is then given to the user and the remaining value of the authentication key is maintained on the account so that the user can check the remaining value by identifying himself. This identification can be automated using the cookie-technology known from the current WWW-browsers in case of WWW-based requesting or using short message sender identifier in case of mobile telephone originated requesting. With such automation the user can simply contact the service provider again and use the services with the remaining value without having to enter any identification codes.

Figure 2 shows an addition to the method shown in Figure 1. The addition comprises two steps, step 22 and step 23. In this embodiment, if the authentication key is verified as valid, the method proceeds to step 22 after step 15. In step 22 a test version of a service is provided to the user and in step 23 a check is carried out to see whether the user does indeed request the service. If the user orders the service, the method proceeds to step 16. If the user does not order the service, the method proceeds to step 17 or 11, depending on embodiment. If no payment is required for the test, then the step 11 will be next, otherwise in the step 17 an authentication key used for having the test version is invalidated.

10

Figure 3 shows a mobile telephone MS suitable for use with the methods of Figure 1, or Figures 1 and 2. The mobile telephone MS comprises an aerial 32, a radio block 34, a user interface 35, a processing means 36 and a program 38. The aerial is connected to the radio block, which is in turn connected to the processing means. The processing means comprises a microprocessor for executing instructions and a memory for maintaining the instructions. The processing means further comprises the program 38 that is used for controlling the mobile telephone MS. The user interface 35 comprises input and output means, having one or more authentication keys, a display, a speaker, and a microphone. The mobile telephone MS is arranged so as to receive a ringing tone from a radio broadcast and to use that ringing tone to alert its user to an incoming telephone call. The telephone also allows the user to send the request for a ringing tone by using its user interface and radio block 34.

Figure 4 shows a prepaid authentication key card 40 for payment of telecommunications services. The authentication key card 40 comprises five authentication keys 42, 44, 44, 46 and 48. Next to each authentication key there is printed a corresponding value. The authentication keys (44, 46, and 48) are initially covered with an opaque layer of a material easy to remove, for example wax or soft lacquer. Thus the authentication keys are not readable until the user uncovers them, for example by scratching the opaque layer. Thus, when buying the card the user can easily verify that the card is unused and all the

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authentication keys are valid. When the layer of material is removed, the authentication key underneath it becomes visible to the user. Hence the covering of an authentication key proves continuing validity of the authentication key. In this example authentication keys 42 to 44 correspond to a value of 20 cents, whereas authentication keys 46 and 48 correspond to 10 and 29 cents. Thus the total price (49) 0,99 USD of the card is printed on the card so that a user can immediately see it, for example when it is purchased in a shop.

Figure 5 shows a block diagram of a prepayment system according to an embodiment of the invention. The system comprises a prepayment server 50, a service control block 52, an authentication key validity database 53 and an authentication key generation block 54 at the server. The prepayment server 50 is an ordinary server computer attached to the Internet and comprising software causing it to implement the prepayment method as described before. The system comprises further a card printer 56, a telecommunications network 58, and a plurality of user devices MS. The prepayment server generates the authentication keys, controls the printout of the authentication keys and controls the payment of the services. The network relays the data traffic between the server and the user devices MS. The generation block produces the authentication keys and sends them both to the printer for printing and to the service control block 52. The printer prints sets of authentication keys on cards (as shown in Fig. 4). The service control block maintains the database 53 of authentication keys and stores the authentication keys and their respective values in the database 53. When the card is delivered to a user, he or she may contact the service provider and request a service. In response for this request, the service provider checks the prepayment of service with the service control block 52 of the prepayment server. The user sends the authentication key over the network to the prepayment server's service control block, which verifies the validity of the authentication key and whether the value associated to the authentication key is sufficient to the price of the requested service. If the authentication key is valid and corresponds to a monetary value at least equal to the price, then the server permits the delivery of the service requested and reduces the monetary value corresponding to the authentication

key that was used. The prepayment server may additionally provide the service requested. In this case the server 50 delivers the service over the network 58 to the user device MS of the user.

5 In a preferred embodiment, there is additionally provided a second server to provide a list of services to the user and to receive user input such as the selection of service and the authentication key. In this case, the second server may reside anywhere, provided that information can be exchanged between the second server and the prepayment server. Both servers are connected to the Internet so  
10 that no mobile telephone operator networks would be involved in cases other than providing a service over a mobile telecommunications network. Using the ringing tone example, the second server residing in the Internet may receive a request for a specific ringing tone from a user having an access to the internet and having a mobile telephone that can receive a ringing tone from a mobile  
15 telecommunications network. In response to the request, a prepayment authentication key and the mobile telephone number of the user are requested and the authentication key is verified, and if accepted, the specific ringing tone is sent to the mobile telephone as a message (for example a short message). The sending of the ringing tone over the mobile telecommunications network involves  
20 use of services of a telecommunications network, but at least many GSM telephone operators provide forwarding of abroad originated short messages to mobile telephones residing in their networks. The ringing tones and other such supplementary services that provide electrical content to a mobile telephone can thus be send practically from all over the world. Another examples of electrical  
25 content providing available in mobile telecommunications include pictures to be used in picture messaging, caller group images and operator logos. It is also possible to provide music songs or video clips. The forthcoming third generation mobile stations are expected to have multimedia functionality allowing use of this kind of information.

30

In the foregoing, a service means any service that can be provided via a communications channel, for example, delivery of a ringing tone or an electrical

greeting card, a musical or video recording from a record company, a donation to charity, payment of car parking fee or a public transportation fee, for which information is simply sent to a server, and nothing is necessarily received. Thus the service can be a transfer of information in either direction, such as to a user,  
5 from a user, or in both directions.

Cheap authentication key cards can be bought with small money. Thus the service is easy to afford, which is likely to promote selling new ringing tones, images and other commercial services like these.

10 This paper presents the implementation and embodiments of the invention with the help of examples. It is obvious to a person skilled in the art that the invention is not restricted to details of the embodiments presented above, and that the invention can be implemented in another embodiment without deviating from the  
15 characteristics of the invention. Thus, the presented embodiments should be considered illustrative, but not restricting. There are numerous ways to vary within the scope of the invention as illustrated below.

Concealing of the authentication key may be arranged by printing the key on a  
20 paper, folding it and sealing closed so that the code is not visible until the ticket is opened.

A printed authentication key may be a sequence of any characters. There may be only one single authentication key on one card.

25 The authentication key may be printed on the card as a bar code, or the authentication key may be attached as some other machine-readable code. The machine-readable code may be a special shape of a card or a magnetic strip. The machine-readable code may be read by a machine such as a reader of a  
30 computer or telephone terminal equipped with such a reader.

The sending of the request may be sending of the authentication key to a World Wide Web -page on the server or sending of an e-mail or short message, or a datagram of any other form. Both the request and the service may be sent in short messages. In this way, a short message centre of a mobile telecommunications network may buffer the messages if the receiving party can not temporarily receive short messages.

The authentication key may be sent directly to the user over a communications link, if the user pays directly to the service provider.

10

Steps 16 and 17 may be in any order, although it is convenient to check, for example automatically, whether the service can indeed be provided to the user if the service is provided prior to invalidating the authentication key or changing the corresponding value thereof. This can be applied in a situation in which the user's device is to receive a ringing tone but does not completely receive it for example if the mobile terminal runs out of power.

15

Step 22 may comprise sending the test version of the service over the Internet or making a telephone call to the user and audibly playing the ringing tone to the user so that the user can listen to the tone and decide if it is a ringing tone the user would like to have. If it is, the user can pay for the complete service, for example by giving another authentication key corresponding to the price of the service. The testing may have a lower price that may just cover the costs of providing the user with the test version. Alternatively, the testing may be free of charge.

20

25

Instead of printing the cards near the server, a set of distributed printers at delivery points (e.g. shops) may be provided to enhance the logistics of the cards comprising the authentication keys.

In yet another alternative embodiment, the telecommunications operator delivers the authentication keys in response to use of a premium telecommunications service (premium telephone call or short message). The user pays for a service by

30

5 The advantage of the embodiment is that no physically existing card need to be sent to the user.

Figure 1 consists of 12 histograms arranged vertically, each representing the distribution of the number of non-zero elements in the vector  $x$  for a specific value of  $n$ . The x-axis for all histograms is labeled 'x' and ranges from 0 to 120. The y-axis is labeled 'count' and ranges from 0 to 100. The histograms are for  $n = 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120$ . As  $n$  increases, the distribution of non-zero elements shifts to the right, indicating that more elements in the vector  $x$  are non-zero for larger  $n$ . The peak count also increases significantly with  $n$ , starting around 100 for  $n=10$  and exceeding 1000 for  $n=120$ .

## CLAIMS

1. A method for prepayment of a service, comprising the steps of:
  - informing the user of the availability of a plurality of different services;
  - receiving from the user over a first communications link an indication of a
  - 5 desired service and a request for the desired service; and
  - providing the requested service to the user over a second communications link;
  - receiving from the user an authentication key to indicate prepayment for the requested service;
  - 10 verifying whether the authentication key is valid, and
  - providing the requested service if the authentication key is valid.
2. A method according to claim 1, wherein the step of informing the user of the availability of a plurality of different services informs the user of the availability of a
- 15 plurality of different contents, and correspondingly, the step of providing the requested service provides the requested content.
3. A method according to claim 1, wherein an authentication key is required each time a service is provided.
- 20 4. A method according to claim 1, the method further comprising:
  - the step of arranging each of the authentication keys to indicate a time period during which they are valid;
  - the step of verifying of validity of the authentication key comprises the step
  - 25 of comparing of the present date with time period during which the authentication key is valid; and
  - the step of rejecting expired authentication keys.
5. A method according to claim 1, wherein the method further comprises the
- 30 following steps before receiving the request from the user:
  - generating the authentication key;
  - maintaining an authentication key validity database for verifying the validity

of any of the generated authentication keys; and  
delivering the authentication key to a user.

6. A method according to claim 5, wherein the generating of the authentication  
5 keys conforms to certain algorithm(s) so that the validity of the authentication key  
can be determined in itself.

7. A method according to claims 4 and 5, the method further comprising:  
the step of scanning the database of used authentication keys for detecting  
10 lapsed authentication keys for removing them from the database of used  
authentication keys.

8. A method according to claim 5, wherein the method further comprises the step  
of modifying the validity database on providing the requested service so that the  
15 monetary value corresponding to the authentication key indicating the payment is  
reduced according to a price of the service requested by the user.

9. A method according to claim 1, wherein the the authentication key is a printed  
user readable code.

20 10. A method according to claim 1, wherein the method further comprises the step  
of concealing the authentication key with a non-reversibly removable concealing  
means.

25 11. A method according to claims 9 and 10, wherein the method further comprises  
printing a group of authentication keys on a card.

12. A method according to claim 1, wherein the first communications link is based  
on at least one of the following: a data network, a telephone network, a mobile  
30 telecommunications network, a local area network and a wide area network.

13. A method according to claim 1, the method further comprising the steps of:

allowing the user to test a service requested; and  
 receiving a final verification from the user before the user is provided with  
 the service.

5 14. A system for prepayment of a service, comprising:

means for informing the user of the availability of a plurality of different  
 services;

means for receiving from the user over a first communications link an  
 indication of a desired service and a request for the desired service; and

10 means for providing the requested service to the user over a second  
 communications link;

means for receiving from the user an authentication key to indicate  
 prepayment for the requested service;

means for verifying whether the authentication key is valid, and

15 means for providing the requested service if the authentication key is valid.

15. A computer program product for prepayment of a service, comprising:

computer readable program means for causing a computer to inform the  
 user of the availability of a plurality of different services;

20 computer readable program means for causing a computer to receive from  
 the user over a first communications link an indication of a desired service and a  
 request for the desired service; and

computer readable program means for causing a computer to provide the  
 requested service to the user over a second communications link;

25 computer readable program means for causing a computer to receive from  
 the user an authentication key to indicate prepayment for the requested service;

computer readable program means for causing a computer to verify  
 whether the authentication key is valid, and

30 computer readable program means for causing a computer to provide the  
 requested service if the authentication key is valid.



## ABSTRACT

A method for prepayment of a service, comprising the steps of:

- informing the user of the availability of a plurality of different services;
- receiving from the user over a first communications link an indication of a desired service and a request for the desired service;
- providing the requested service to the user over a second communications link;
- receiving from the user an authentication key to indicate prepayment for the requested service;
- verifying whether the authentication key is valid, and
- providing the requested service if the authentication key is valid.

Fig. 1.

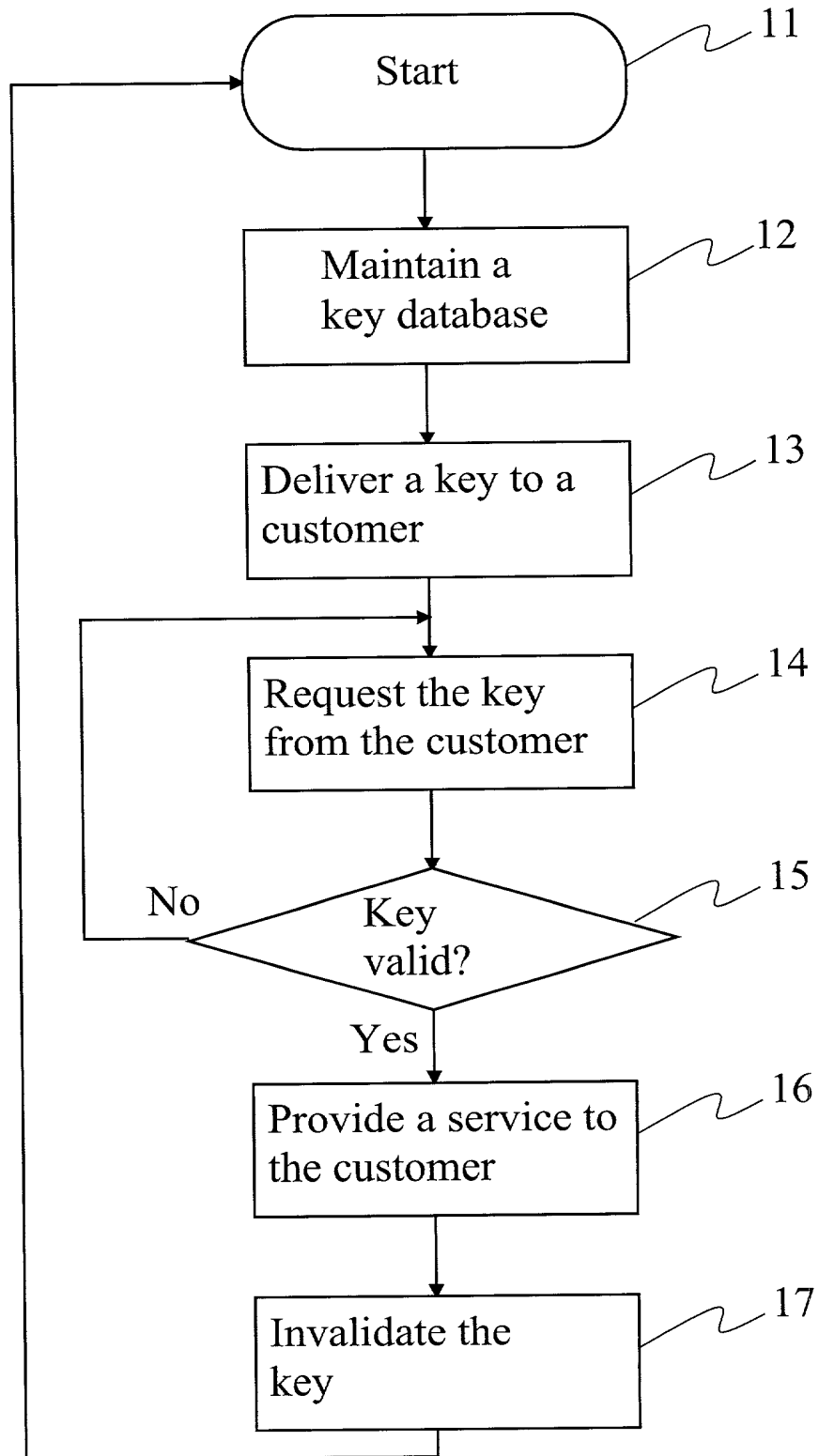


Fig. 1

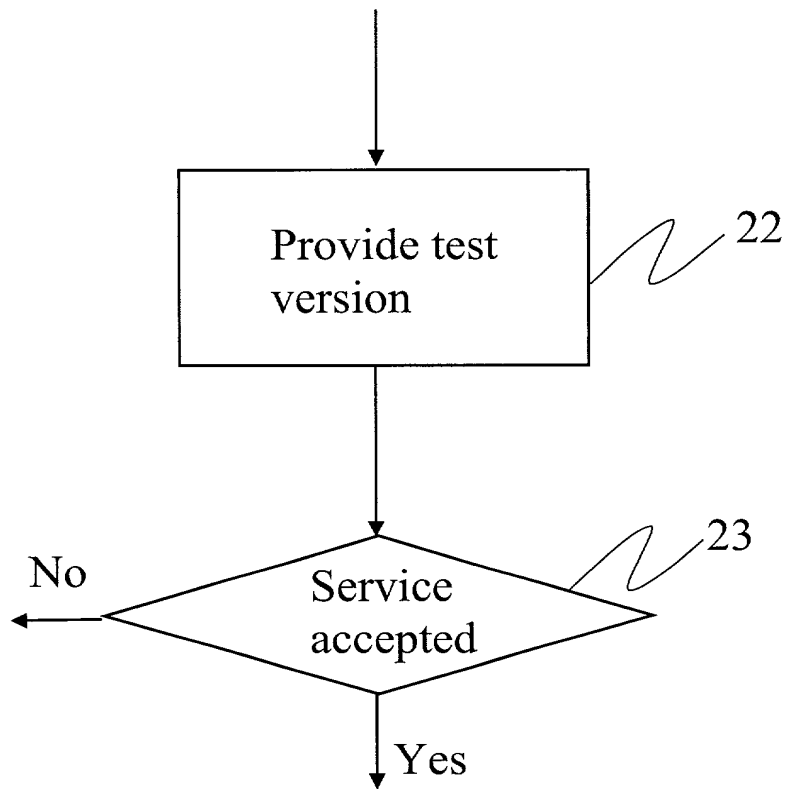


Fig. 2

MS

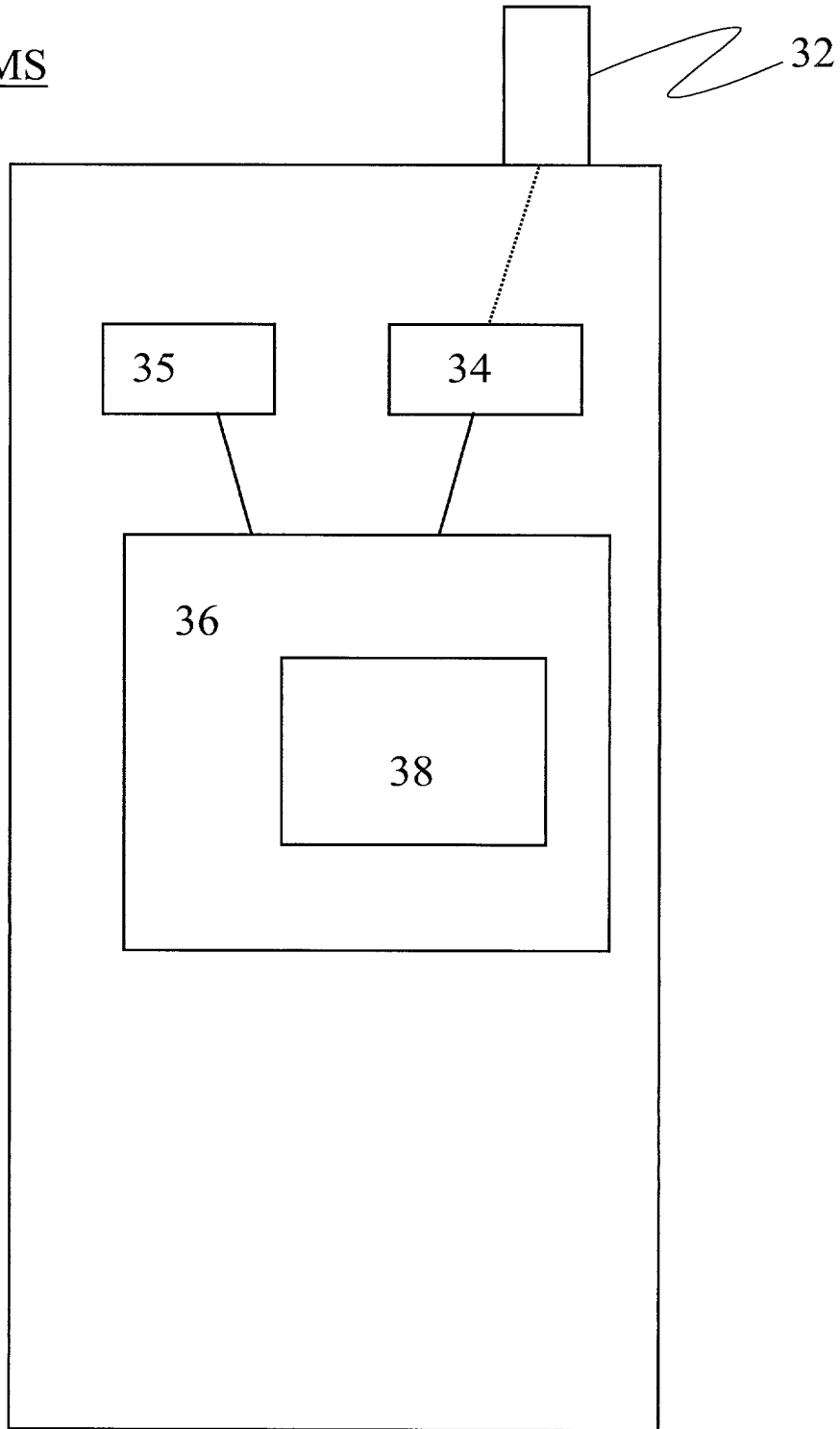


Fig. 3

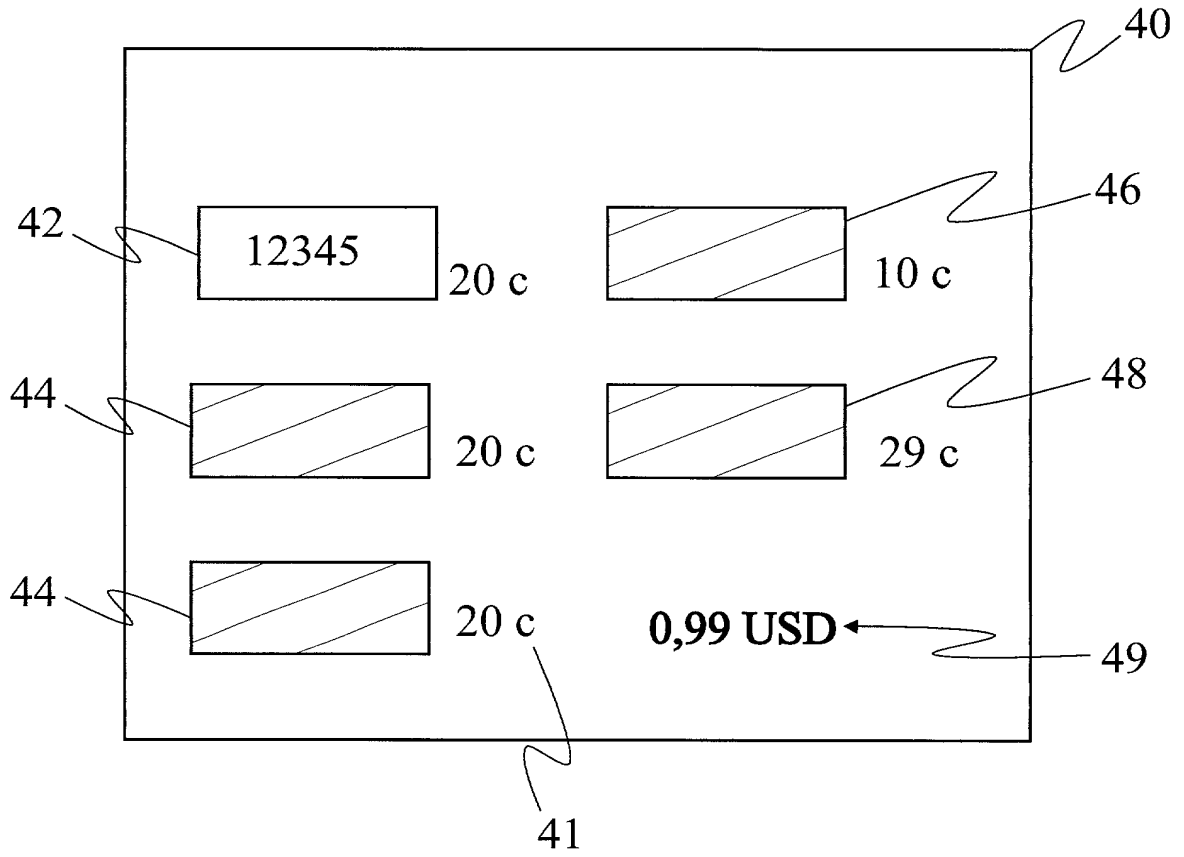


Fig. 4

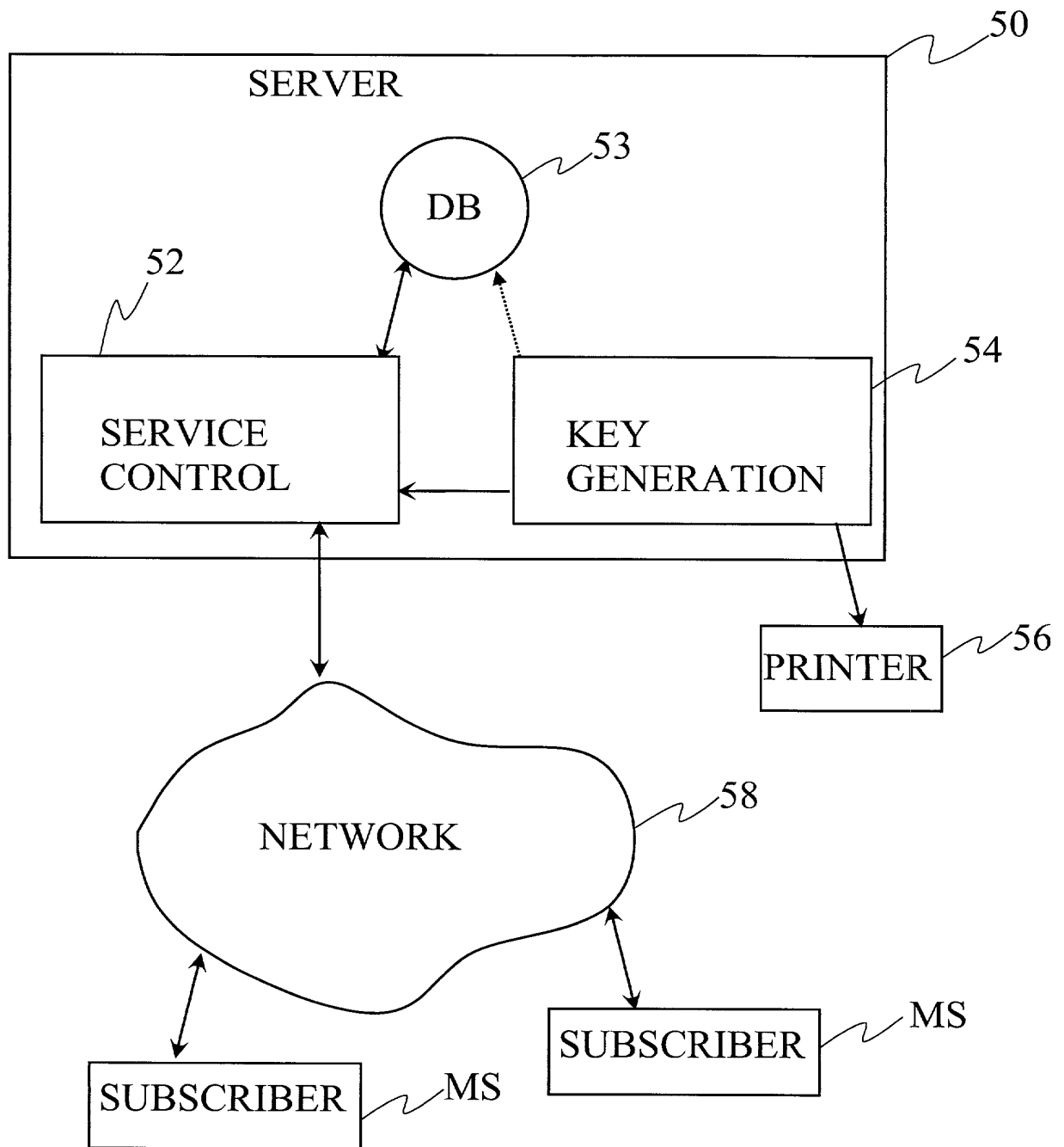


Fig. 5

Attorney's Docket No. \_\_\_\_\_

PATENT

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COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL,  
CONTINUATION OR C-I-P)

---

As a below named inventor, I hereby declare that:

**TYPE OF DECLARATION**

This declaration is of the following type: (check one applicable item below)

- ☒ original  
☐ design  
☐ supplemental

*NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application, do not check next item; check appropriate one of last three items.*

- ☐ national stage of PCT

*NOTE: if one of the following 3 items apply, then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR C-I-P.*

- ☐ divisional  
☐ continuation  
☐ continuation-in-part (C-I-P)

**INVENTORSHIP IDENTIFICATION**

**WARNING:** If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below next to my name.  
I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

---

**CHARGING FOR TELECOMMUNICATIONS SERVICES**

---

**SPECIFICATION IDENTIFICATION**

the specification of which: (complete (a), (b) or (c))

- (a) ☒ is attached hereto.  
(b) ☐ was filed on \_\_\_\_\_ as ☐ Serial No. 0 \_\_\_\_\_ /  
or ☐ Express Mail No., as Serial No. not yet known  
and was amended on \_\_\_\_\_ (if applicable)

(Declaration and Power of Attorney [1-1]-page 1 of 5)

05/16/2011 11:20:00

NOTE: Amendments filed after the original papers are deposited with the PTO which contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

- (c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_ filed on \_\_\_\_\_ and as amended under PCT Article 19 on \_\_\_\_\_ (if any).

#### ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information

- ☒ which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56  
(also check the following items, if desired)

☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent, and

- ☐ In compliance with this duty there is attached an information disclosure statement in accordance with 37 CFR 1.98.

#### PRIORITY CLAIM (35 U.S.C. § 119)

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate or of any PCT International application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT International application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

- (d) ☐ no such applications have been filed.  
(e) ☒ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

#### A. PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS



**(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
<b>Finland</b>	<b>19992485</b>	<b>22.11.1999</b>	<input checked="" type="checkbox"/> <b>YES</b> <b>NO</b> <input type="checkbox"/>
			<input type="checkbox"/> <b>YES</b> <b>NO</b> <input type="checkbox"/>
			<input type="checkbox"/> <b>YES</b> <b>NO</b> <input type="checkbox"/>
			<input type="checkbox"/> <b>YES</b> <b>NO</b> <input type="checkbox"/>
			<input type="checkbox"/> <b>YES</b> <b>NO</b> <input type="checkbox"/>

**ALL FOREIGN APPLICATION(S), IF ANY FILED MORE THAN 12 MONTHS  
(6) MONTHS FOR DESIGN PRIOR TO THIS U.S. APPLICATION**

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*NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.*

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(List name and registration number)*

Clarence A. Green (24,622)  
Harry F. Smith (32,493)  
Mark F. Harrington (31,686)

*(check the following item, if applicable)*

- ☐ Attached as part of this declaration and power of attorney is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

Declaration and Power of Attorney [1-1]-page 3 of 5)

SEND CORRESPONDENCE TO

Perman & Green

DIRECT TELEPHONE CALLS TO:

*(Name and telephone number)*

Mark F. Harrington

425 Post Road  
Fairfield, CT 06430-6232

(203) 259-1800

### DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

### SIGNATURE(S)

*NOTE: Carefully indicate the family (or last) name as it should appear on the filing receipt and all other documents.*

Full name of sole or first inventor

Timo

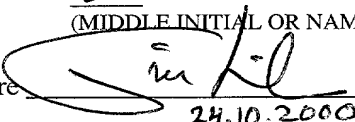
(GIVEN NAME)

E

(MIDDLE INITIAL OR NAME)

SIVULA

FAMILY (OR LAST NAME)

Inventor's signature 

Date 24.10.2000 Country of Citizenship Finnish

Residence Espoo, Finland

Post Office Address Hämeenkyläntie 23 A, FIN-02660 Espoo, Finland

Full name of second joint inventor, if any

\_\_\_\_\_  
(GIVEN NAME)

\_\_\_\_\_  
(MIDDLE INITIAL OR NAME)

\_\_\_\_\_  
FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship \_\_\_\_\_

Residence \_\_\_\_\_

Post Office Address \_\_\_\_\_

Full name of third joint inventor, if any

\_\_\_\_\_  
(GIVEN NAME)

\_\_\_\_\_  
(MIDDLE INITIAL OR NAME)

\_\_\_\_\_  
FAMILY (OR LAST NAME)

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Country of Citizenship

Residence

Post Office Address

CHECK PROPER BOX(ES) FOR ANY OF THE FOLLOWING ADDED PAGE(S) WHICH FORM  
A PART OF THIS DECLARATION

- ☐ Signature for fourth and subsequent joint inventors. *Number of pages added*  
...
- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or  
incapacitated inventor. *Number of pages added*  
...
- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorised under  
37 CFR 1.47. *Number of pages added*  
...
- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s)  
where legal representative cannot be appointed in time (37 CFR 1.47).  
...
- ☐ Added pages to combined declaration and power of attorney for divisional, continuation, or  
continuation-in-part (C-I-P) application. ☐ Number of pages added  
...
- ☐ Authorization of attorney(s) to accept and follow instructions from representative.  
...

(If no further pages form a part of this Declaration, then end this Declaration with this page and  
check the following item:)

☒ This declaration ends with this page.

(Declaration and Power of Attorney [1-1]-page 5 of 5)